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भारतीय मानक

चिलगोजा गिरी — विशिष्टि

Indian Standard

CHILGOZA NUTS — SPECIFICATION

ICS 67.080.10

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

October 2013 **Price Group 2**

Processed Fruits and Vegetable Products Sectional Committee, FAD 10

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Processed Fruits and Vegetable Products Sectional Committee had been approved by the Food and Agriculture Division Council.

Chilgoza nuts are highly nutritious nuts having carminative, stimulant and expectorant properties.

This standard on Chilgoza nuts is aimed at proposing grade standards which will help the farmers trade their produce at remunerative prices at national and international level.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CHILGOZA NUTS — SPECIFICATION

1 SCOPE

This standard specifies requirements and methods of sampling and test for chilgoza nuts obtained from chilgoza cones (*Pinus gerardiana*).

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards:

IS No.	*Title*
1070 : 1992	Reagent grade water (*third revision*)
1797 : 1985	Methods of test for spices and condiments (*second revision*)
4624 : 1978	Specification for dehydrated peas (*first revision*)

3 REQUIREMENTS

3.1 General Characteristics

The chilgoza nuts shall be extracted from sound cones after drying. They shall have the characteristic shape and shall be free from resinous material. The chilgoza nuts shall be practically free from resin and other extraneous material, such as stones, dirt or any other foreign matter.

3.2 Freedom from Mould, Insects, etc

The nuts shall be free from living insects and moulds and shall be practically free from dead insects, insect fragments and rodent contamination visible to naked eye (corrected if necessary, for abnormal vision) with such magnification as may be necessary in any particular case. If the magnification exceeds 10X, this fact shall be stated in the test report.

3.3 Extraneous Vegetable Matter

Extraneous vegetable matter like stalks, pieces of shells, pits, fibre and peel shall not be more than 1.0 percent by mass when tested as per **4** of IS 1797.

3.4 Moisture

Moisture (*m/m*) shall not be more than 7.0 percent when tested as per Appendix A of IS 4624.

3.5 Acidity

Acidity of extracted fat expressed as oleic acid shall not be more than 1.25 percent when determined as per Annex A of this Standard.

3.6 Grades

The grade designations, trade names and characteristics of chilgoza nuts are given in Annex B.

3.7 The pesticide residues, heavy metals, aflatoxins, etc, if any in the product shall not exceed the limit as prescribed in the *Food Safety and Standards Act*, 2006 and the Rules made thereunder. Additionally, the *Food Safety and Standards Act*, 2006 and the *Legal Metrology (Packaged Commodities) Rules*, 2011 requirements wherever applicable have to be complied with.

4 PACKING AND MARKING

4.1 Packing

The chilgoza nuts shall be packed in new, clean, dry and leak proof containers and the containers shall be securely closed and sealed in such a manner that the chilgoza nuts remain in inert atmospheric conditions inside the container.

4.2 Marking

The following particulars shall be marked or labelled on each container:

a) Name of the material;
b) Name and address of the packer/manufacturer;
c) Net quantity;
d) Grade of the material;
e) Name of the country, where packed;
f) Any other marking required by the purchaser; and
g) Any other information required under the *Legal Metrology (Packaged Commodities) Rules*, 2011 and the *Food Safety and Standards (Packaging and Labelling) Regulations*, 2011 and the *Food Safety and Standards Act*, 2006.

4.2.1 *BIS Certification Marking*

The product may also be marked with the Standard Mark.

4.2.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

5 SAMPLING

Representative samples of the material for testing the conformity of this specification shall be drawn according to the methods given in Appendix G of IS 4624.

6 TESTS

6.1 Samples of chilgoza nuts shall be tested for conformity with the requirements of this standard by visual examination.

6.2 In respect of grades (extra to small) (*see* **B-1**), the count shall be checked by weighing 100 g of the material and counting the nuts. Percentage of nuts of the next lower grade, if any, shall also be ascertained and recorded. In respect of quality grades (*see* **B-2**), the samples shall be checked for the surface colour visually.

6.3 Unless otherwise specified, quality reagents, chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect experimental results.

ANNEX A

(*Clause* 3.5)

DETERMINATION OF ACIDITY OF EXTRACTED FAT

A-1 PRINCIPLE

The acid value is determined by directly titrating the oil/fat in an alcoholic medium against standard potassium hydroxide/sodium hydroxide solution.

A-1.1 Analytical Importance

The value is a measure of the amount of fatty acids which have been liberated by hydrolysis from the glycerides due to the action of moisture, temperature and/or lypolytic enzyme lipase.

A-2 APPARATUS

A-2.1 Conical Flasks — 250 ml capacity.

A-3 REAGENTS

A-3.1 Ethyl Alcohol — Ninety-five percent alcohol or rectified spirit neutral to phenolphthalein indicator.

A-3.2 Phenolphthalein Indicator Solution — Dissolve one gram of phenolphthalein in 100 ml of ethyl alcohol.

A-3.3 Standard Aqueous Potassium Hydroxide or Sodium Hydroxide Solution — 0.1 or 0.5 N. The solution should be colorless and stored in a brown glass bottle.

A-4 PROCEDURE

A-4.1 Mix the oil or melted fat thoroughly before weighing. Weigh accurately about 5 to 10 g of cooled oil sample in a 250 ml conical flask and add 50 ml to 100 ml of freshly neutralized hot ethyl alcohol and about one ml of phenolphthalein indicator solution. Boil the mixture for about five minutes and titrate while hot against standard alkali solution shaking vigorously during the titration. The weight of the oil/fat taken for the estimation and the strength of the alkali used for titration shall be such that the volume of alkali required for the titration does not exceed 10 ml.

A-5 CALCULATION

$$\text{Acid value, percent by mass} = \frac{56.1 \times V \times N}{W}$$

where

V = volume, in ml of standard potassium hydroxide or sodium hydroxide used;

N = normality of the potassium hydroxide solution or sodium hydroxide solution; and

W = weight, in g of the sample.

The acidity is frequently expressed as free fatty acid for which calculation shall be:

$$\text{Free fatty acids as oleic acid percent by weight} = \frac{28.2 \times V \times N}{W}$$

$$\text{Acid value} = \text{Percent fatty acid (as oleic acid)} \times 1.99$$

ANNEX B

(*Clause* 3.6)

GRADE DESIGNATIONS, TRADE NAMES AND CHARACTERISTICS OF CHILGOZA NUTS

B-1 CHILGOZA NUTS

Sl No. (1)	*Grade Designation* (2)	*Number of Nuts per 100 g* (3)	*Average Length (mm)* (4)	*Characteristic* (5)
i)	Extra	200-240	24	The chilgoza nuts shall have the characteristic shape, dark brown in colour reasonably dry and free from rosin and damaged nuts.
ii)	Usual	255-275	18	
iii)	Small	380-420	13	

NOTE — Nuts of next lower grade, if any, shall not exceed 5 percent by weight.

B-2 SURFACE IMPROVED CHILGOZA NUTS

Sl No. (1)	*Grade Designation (According to Size)* (2)	*Number of Nuts per 100 g* (3)	*Average Length (mm)* (4)	*Grade Designation (According to Quality)* (5)	*Characteristic* (6)
i)	Extra	200-240	24	AAA, AA, A	The chilgoza nuts shall have the characteristic shape, cream white in colour reasonably dry and free from damaged nuts.
ii)	Usual	255-275	18	AAA, AA, A	
iii)	Small	380-420	13	AAA, AA, A	

where

AAA — above 80 percent cream white.
AA — 40-80 percent cream white.
A — below 40 percent cream white.

NOTE — Nuts of next lower grade, if any, shall not exceed 5 percent by weight.

B-3 SALTED CHILGOZA NUTS

Sl No. (1)	*Grade Designation* (2)	*Number of Nuts per 100 g* (3)	*Average Length (mm)* (4)	*Characteristic* (5)
i)	Extra	200-240	24	The chilgoza nuts shall have the characteristic shape, dark brown in colour reasonably dry and free from adhered salt and damaged nuts. Salt concentration on the kernels should not exceed 1.0 percent.
ii)	Usual	250-270	18	
iii)	Small	380-410	13	

NOTE — Nuts of next lower grade, if any, shall not exceed 5 percent by weight.

B-4 SALTED SURFACE IMPROVED CHILGOZA NUTS

Sl No. (1)	*Grade Designation* (2)	*Number of Nuts per 100 g* (3)	*Average Length (mm)* (4)	*Grade Designation (According to Quality)* (5)	*Characteristic* (6)
i)	Extra	200-240	24	AAA, AA, A	The chilgoza nuts shall have the characteristic shape, cream white in colour reasonably dry and free from adhered salt and damaged nuts. Salt concentration on the kernels should not exceed 1.0 percent.
ii)	Usual	250-270	18	AAA, AA, A	
iii)	Small	380-410	13	AAA, AA, A	

where

AAA — above 80 percent cream white.
AA — 40-80 percent cream white.
A — below 40 percent cream white.

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Amendments Issued Since Publication

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